# **Index, Volume 36, 1983**

Abdalla, O.M., 46 Acacia farnesiana, 295, 337 Acacia spp, 246 Acacia schaffneri, 411 Adams, D.C., 405 Agronomic and acetylene reduction evaluation of three annual medics, 55 Agropyron cristatum, 91 Agropyron desertorum, 225, 483, 499, 589, 694, 786 Agropyron smithii, 179, 402 Agropyron spp., 529, 700, 703, 771 Agropyron trachycaulum, 565 Ahmed, Javed, 217 Alpine vegetation,740 Alaniz, M.A., 646 Alcaniz, Rene, 257 Aldon, Earl F., 576 Alexander, Lynn E., 35, 307 Amphiachyris dracunculoides, 521, 619 Analytical reliability in the decision making process-the numbers game, 126 Anderson, B.E., 700 Anderson, D.M., 542 Anderson, M.J., 529 Andropagon gerardii, 131 Andropogon virginicus, 773 Animal damage, 495 Annual broomweed [Gutierrezia dracunculoides (DC). Black] response to burning and mulch addition, 711 Annual grass-subclover mixed stand, 444, Antelope, 749 Applopappus tenuisectus, 604 archardgrass, 700 Aristida stricta, 298 Arno, Stephen F., 332 Artemisia cana, 611 Artemisia spp. 485 Artemisia tridentata, 225, 450, 455, 492, 589, 596, 707, 718, 760, 786 Artemisia wyomingensis, 596 Asay, K.H., 529, 703, 771 Atrazine,87

Atriplex canescens, 713

Attentiveness of guarding dogs for reducing predation on domestic sheep, 275 Austin, Dennis D., 225, 589

B

Bahrami, J., 234 Baker, R.L., 121 Balla, E.F., 483 Baltensperger, Arden A., 55 Barker, Jerry R., 450 Baseline elemental concentrations for big sagebrush from western U.S.A., 718 Bartel, L.E., 363 Bartmann, Richard M., 534 Bartolome, James W., 265 Baskin, Carol C., 619 Baskin, Jerry M., 619 Beale, Donald M., 749 Beaty, E.R., 234 Beavis, William D., 576 Becic, James N., 673 Beef and forage production on contour furrowed rangeland interseeded with alfalfa, 479 Beef cattle performance on crested wheatgrass plus native range vs. native range alone, 38 Beef production, 733 Behan, Mark J., 565 Behaviour of free-ranging cattle on an alpine range in Australia, 740 Bellows, R.A., 479 Berberis trifoliolata, 601 Biases in the step-point method on bunchgrass ranges, 623 Biological manipulation of blackbrush by goat browsing, 513 Bishop, J.L., 479 Bison and cattle diet overlap, 499 Bison bison, 499 Bjorge, Ronald R., 20 Blackburn, W.H., 154 Blair, Brian J., 527 Blair, Robert M., 257 Blauer, A. Clyde, 78

Bleich, Vernon C., 133

to fertilization of a claypan soil in the greenhouse, 232 Boe, A., 131, 652 Bohning, John W., 138 Bokari, U.G., 431 Bonham, Charles D., 217, 363 Boote, K.J., 9 Booth, D. Terrance, 387 Botanical composition, 208 Bothriochloa spp., 431 Bouteloua gracilis, 179, 232, 713 Boutton, Thomas W., 213 Bowns, James E., 472, 513, 518 Boyd, W.E., 521 Bramble-Brodahl, Mary, 775 Bray, Martin P., 499 Britton, C.M., 343, 707, 708 Brooke, B., 440 Bromegrass, 700 Bromus inermis, 565 Broomweed, 619 Brotherson, Jack D., 250, 492, 579 Brown, R.D., 222 Browse, 757, 779 Browsed-class method of estimating shrub utilization, 632 Browsing, 152 Brush management, 309, 351, 363, 510, Bryant, F.C., 165, 385 Buckhouse, John C., 58 Budgets, 782 Buffelgrass, 582 Bunting, Stephen C., 169 Burning and 2,4,5-T application on mortality and carbohydrate reserves in sawpalmetto, 9 Burning brushlands (prescribed), 596, 611 Burning (prescribed), 161, 165, 169, 175, 346, 604 Burning, (season of), 179 Burroweed, 604

Butcher, John E., 513

Butler, Susan Ann. 463

Blue grama [Bouteloua gracilis] response

Calamagrostis rubescens, 440

Caliche, 723

Campbell, Erick G., 488

Coppicing, 145, 375

Carbohydrate reserves, 70, 75

Carbohydrates (total nonstructural), 236

Cardenas, M., 145, 370, 723 Carex filifolia, 179

Carex nebraskensis, 429

Caton, Joel, 31

Cattle and elk competition, 184

Cattle diets, 38, 41, 46

Cattle management, 571

Cattle trampling of simulated ground nests under short duration and continuous grazing, 385

Cedarleaf, Joy D., 492 Cenchrus ciliaris, 582 Center, D.M., 378

Cercocarpus montanus, 632

Changes in understory production following a wildfire in southwestern ponderosa pine, 507

Chemosterilant, 753 Chloris gayana, 582

Chlorophyll dry matter, and photosynthetic conversion-efficiency relationships in warm-season grasses, 431

Chrysothamnus nauseosus, 616

Clipping, 234,236 Clark, D.H., 38, 46

Clark, R.G., 708 Clary, Warren P., 749

Clipping frequency and fertilization influence herbage yields and crude protein content of 4 grasses in south Texas, 582

Cluff, Greg J., 419, 786 Coleogyne ramosissima, 513, 518

Comparative performance of some native and introduced grasses in southern Saskatchewan, Canada, 654

Comparison of big sagebrush vegetation in northcentral New Mexico under moderately grazed and grazing excluded conditions, 455

Comparison of four methods used to determine the diets of large herbivores,

Comparison of three methods for estimating forage disappearance, 469

Comparison of techniques used for adjusting biomass estimates by double sampling, 217

Composition and quality of mule deer diets on pinyon-juniper winter range, Colorado, 534

Conlon, Thomas J., 354

Control of Grasshoppers on rangeland in the United States—a perspective, 202 Controlling mature ashe juniper in Texas

with crown fires, 165

Coppinger, Ray, 275 Correction factors, 730

Correcting for differential digestibility in microhistological analyses involving common coastal forages of the Pacific Northwest, 730

Correcting for salivary contamination of esophageal fistula samples, 119

Correlation of honey mesquite response to herbicides with three plant variables and soil water, 613

Cover (canopy), 213 Cover (waterfowl), 691

Cover (wildlife), 110 Covington, W. Wallace, 507

Coyote predation on sheep, and control by aversive conditioning in Saskatchewan, 16

Cox, Jerry R., 649, 726

Creosotebush, 726

Crested wheatgrass-early history in the United States, 91

Cross, B.T., 601 Crude protein, 779

Cryptogam, 579

Cuany, Robin L., 239

Cupgrass, 668

Currie, Pat O., 179, 611, 771 Cynomys ludovicianus, 753

Cytokinins effect on protein and chlorophyll content of big bluestem leaves, 75

Dactylis glomerata, 565

Dahl, Bill E., 457, 665 Dams (sand), 133

Data collection, 463, 542 Davey, Patrick R., 675

Davis, James N., 485

Decomposition rates, 668

Defoliation, 70

Degradation (tebuthiuron), 295

Degree of use, 302, 492, 623, 632 Delphinium occidentale, 550

Density and production of seeded range grasses in southeastern Arizona (1970-1982), 649

Desert saltgrass seed germination and seedbed ecology, 419

Dicanthium annulatum, 222, 582

Diethylstilbestrol as a temporary chemosterilant to control blacktailed prairie dog populations, 753

Diets of bison and cattle on a seeded range in southern Utah, 499

Differential grazing use of herbicidetreated areas by cattle, 65

Disappearing forbs in microhistological analysis of diets, 132 Distichlis spicata, 419

Distribution of dry matter and chemical constituents in plant parts of four Florida native grasses, 298

Dodd, Jerrold L., 744

Doerr, T.B., 423 Dog predation of domestic sheep in Ohio,

Drawe, D. Lynn, 337, 582

Drought effects on diet and weight gains of yearling heifers in northeastern Oregon, 227

Drying oven, 676 Dunavin, L.S. 773 Duncan, K.W., 295, 568

Eck. 435

Ecological relationships, 190, 250

Ecological characteristics and control of gambel oak, 363

Economics of gypsum and elemental sulfur as fertilizers on subcover-grass pastures in northern California, 378

Ecophysiology of seed germination and flowering in common broomweed, Amphiachyris dracunculoides (D.C.) Nutt., 619

Ecotypic variation in Tripsacum dactyloides evaluated in Texas, 665

Edaphic factors influencing the control of Wyoming big sagebrush and seedling establishment of crested wheatgrass, 786

Edgerton, Paul J., 184

Effect of cultural practices on seeded plant communities on intensively disturbed soils, 423

Effect of sodium and magnesium sulfate on forage seed germination, 658

Effect of soil contamination on the mineral composition of forage fertilized with nitrogen, 286

Effect of time of seeding on emergence and long-term survival of crested wheatgrass in British Columbia, 694

Effect of water and nitrogen, and grazing on nematodes in a shortgrass prairie, 744 Effect of weedy annuals on the survival and growth of transplants under arid conditions, 366

Effectiveness of antelope pass structures on restriction of livestock, 22

Effects of annual application of low N fertilizer rates on a mixed grass prairie,

Effects of cattle and deer on regenerating mixed conifer clearcuts, 265

Effects of late season cattle grazing on riparian plant communities, 685

Effects of long-term grazing on cryptogram crust cover in Navajo National Monument, Ariz., 579

Effects of plant shredding on nutrient content of four south Texas deer browse species, 779

Effects of prescribed burning on silver sagebrush, 611

Effects of single and sequential defoliations on the carbohydrate reserves of four range species, 70

Effects of soil moisture on burned and clipped Idaho fescue, 708

Effects of surface mining on the vesper sparrow in the northern Great Plains,

Efficacy of zinc phosphide broadcast baiting for controlling Richardson's ground squirrels on rangeland, 504

Elk use of winter range as affected by cattle grazing, fertilizing, and burning in southeastern Washington, 184

Elymus cinereus, 395 Elymus trachycaulus, 771 Energy conversion, 431 Engle, D.M., 363 Erdman, James A., 280, 718 Erosion, 145, 375, 435, 683, 685 Ephedra cutleri, 375 Eragrostis curvula, 431 Erograstis lehmanniani, 726 Eragrostis, spp., 649 Establishment of blue grama and fourwing saltbush on coal mine spoils using saline ground water, 713 Estimation of plant biomass by spectral reflectance in an east African grassland, 213 Estimating snowberry [Symphoricarpos oreophilus] utilization by sheep from twig diameter-weight relations, 472 Evaluating management alternatives with a beef production systems model, 733 Evaluation of a fertilized 3-pasture system grazed by yearling steers, 354 Evans, Carol C., 61 Evans, Raymond A., 61, 82, 395, 419, 786 Everitt, J.H., 779 Evenson, W.E., 250 Everitt, J.H., 246, 411, 662, 646 Ewing, Anne L., 415

Fairbourn, Merle L., 359 Feasibility of microwave ovens for drying plant samples, 676 Fecal analysis, 302, 730 Feder, Gerald L., 280 Fencing, 22, 269 Feral herbivores suppress mamane and other browse species on Mauna Kea, Hawaii, 638 Fertilization (elk response to), 184 Fertilization (N), 41, 232, 234, 286, 354, 359, 435, 582 Fertilization (P), 140, 435, 582 Fertilization (range), 444 Fertilization (S), 378 Fertilization (sludge), 773 Festuca arizonica, 565 Festuca arundinaceae, 234 Festuca idahoensis, 708 Fiber effects on microhistological analysis, 477 Fierro, L.C., 225, 589 Fire effects, 507, 708 Fire history at the forest-grassland and ecotone in southwestern Montana, 332 Fire-induced mortality of redberry juniper [Juniperus pinchotii Sudu.], 343 Fisser, H.G., 124 Fistula (esophageal), 405 Fistula forage sample, 119 Fistula sample numbers required to determine cattle diets on forest and grassland range, 323 Fistulation (esophageal), 302 Fitzgerald, R.D., 757 Flake, Lester D., 691

ď,

Food habits (antelope) 110 Food habits (cattle), 65, 323 Food habits (mule deer), 312 Food habits of mountain goats, mule deer, and cattle on Chopaka Mountain, Washington, 1977-1980, 488 Food habits of Nilgai antelope in Texas, 316 Food habits (sheep), 307 Food habits (sheep and deer), 190 Food supply, 225 Forage analysis, 227, 529 Forage evaluation, 225 Forage production, 179, 399 Forage removal, 463, 469, 472 Forage selection, 485, 685, 740, 749 Forage standing crop and animal diets under rotational vs. continuous grazing, 447 Foster, John W., 327 Francis, Richard E., 675 Frandsen, William H., 596 Franklin, William L., 753 Fuel load, 596 Fuel-load reductions resulting from prescribed burning in grazed and ungrazed Douglas-fir stands, 346

Fulbright, Timothy E., 390

Gains of steers and calves grazing crested wheatgrass, 483 Gaither, Ronald E., 58 Galyean, M.L., 31 Garner, Gerald W., 110 Garrett, James R., 782 Garrett, Monte G., 753 Gausman, H.W., 662 Gebhardt, Karl, A., 126 Genetic differences in resistance of range grasses to the bluegrass billbug, Sphenophorus parvulus (Coleoptera: curculionidae), 77 Genetic variability for characters affecting stand establishment in crested wheatgrass, 703 Germano, David J., 309 Germination characteristics of two varieties of Kochia prostrata (L.) Schrad., 242 Germination of broomweed, 619 Germination of Indian ricegrass, 239 Germination of kochia, 242 Germination requirements of green needlegrass (Stipa viridula Trin.), 390 Goats (domestic), 518 Gibbens, R.P. 145, 149, 370, 723 Giffin, Jon G., 638 Gifford, Gerald F., 152 Glendinning, John, 275 Gough, Larry P., 718 Gould, Walter L., 149, 713 Grasshopper food habits, 793 Grasshoppers, 202 Grasslands, 775 Gray, Gary G., 190 Grazing effects, 114, 265, 346, 354, 382, 385, 458, 683, 685 Grazing intensity, 586, 593

Grazing seasons, 589 Grazing (simulated), 582 Green, Norman E., 576 Gross, Bryan D., 22, 475 Growth performance comparisons among 18 accessions of fourwing saltbush [Atriplex canescens] at two sites in central Utah, 78 Grubber blade, 601 Guard dogs, 275 Guthery, Fred S., 351, 385 Gutierrezia dracuculoides, 711

Haase, William R., 158 Habitat differences between basin and Wyoming big sagebrush in contiguous populations, 450 Habitat selection and vegetational characteristics of antelope fawn bedsites in west Texas, 110 Habitat types, 775 Habitat use of feral horses and cattle in Wyoming's Red Desert, 195 Hacker, Ron, B., 25 Haferkamp, M.R., 94 Hager, J.A., 38, 46 Hallford, Dennis, 22 Hamid, M.H., 46 Hansen, Richard M., 289, 307, 477 Hanson, J.D., 613, 771 Harrell, Austin, 257 Hart, R.H., 38, 46, 119, 483 Hartman, Margaret J., 547 Havstad, Cynthia, 239 Haws, B.A., 771 Hayes, Roberta, 31 Hennessy, J.T., 145, 370, 723 Herbage dynamics and forage quality of Texas cupgrass, (Eriochloa sericea), 668 Herbage production and quality of grasses with livestock and wildlife value in Texas, 52 Herbage quality of fertilized cool-season grass-legume mixtures in western Nebraska, 571 Herbage yield, 766 Herbage yields, 415 Herbel, Carlton H., 140, 149 Herbicidal control of common broomweed, 521 Herbicidal efficiency, 9, 149, 295, 613 Herbicide treatment and vegetation response to treatment of mesquite in southern New Mexico, 149 Herbicides, 87, 700, 707 Herbicides (phenoxy), 613 Herbicides (tebuthiuron), 568 Herbivore diet, 730 Herndon, E.B., 521 Hewitt, George B., 202 Hodgkinson, Harmon S., 375 Hofmann, L., 658 Holechek, Jerry L., 22, 227, 323, 455, 475 Holland, Heinrich D., 280 Holt, E.C., 52 Horse and cattle competition, 195 Horses, (feral), 195, 199

Flourensia cernua, 525

Impact and control of the range crane fly (Tipula simplex doane) in the central valley of California, 547

Impact of feral herbivores on mamane forests of Mauna Kea, Hawaii, bark stripping and diameter class structure,

Impact of range goats on infiltration rates in southwestern Utah, 152

Impacts of cattle on streambanks in northeastern Oregon, 683

Important lichen of southeastern Montana rangelands, 35

Improved method for attaching the esophageal fistula bag, 405

"Improved sand dams for wildlife habitat management, 133

Improvement of eastern Nebraska tallgrass range using atrazine or glyphosate, 87

Indicators (ecological), 457

Indirect method to estimate the aerial biomass of small single stemmed woody plants, 757

Infiltration rates and sediment production following herbicide/fire brush treatments, 154

Infiltration rates of varius vegetative communities within the blue mountains of Oregon,

Influence of clay and organic matter of rangeland soils on tebuthiuron effectiveness, 295

Influence of dietary nitrogen source and drinking water pH on growth, digestibility and nitrogen metabolism in lambs fed a high roughage diet, 31

Influence of heteromyid rodents on Oryzopsis hymenoides germination, 61

Influence of spring burning on cattle diets and performance on the Edwards Plateau, 175

Influence of vesicular-arbuscular mycorrhizal fungi on the nodulation and growth of subclover, 576

Initial growth of two range grasses on nonfertilized and fertilized soils collected from creosotebush communities in the southwestern United States, 726

Inoculation of subclover, 576 Insect damage, 202, 547, 771, 793 Interception of rainfall by tarbush, 525 Introduced species, 91, 654 Irrigation,423

Jacoby, P.W., 510 Jelinski, D.E., 16 Joern, Anthony, 793 Johansen, Jeffrey R., 250, 579 Johnson, D.A., 703 Johnson, Rolf L., 488 Jones, M.B., 378, 444 Jordan, Gilbert L., 649 Jowsey, J.R., 16 Juniperus ashei, 165

Juniperus pinchottii, 161, 169, 343

Kalmbacher, R.S., 9, 298 Kaltenbach, C.C., 38 Karn, J.F., 41 Kartchner, R.J., 405, 479 Kauffman, J. Boone, 683, 685 Kehr, W.R., 700 Kerbs, Roger R., 675 Kilcher, M.R., 654 Kissock, D.C., 94 Kleberg bluestem, 222 Kleiner, Edgar F., 114 Klemmedson, James O., 558 Kochia prostrata, 242 Kochia scoparia, 646 Knight, Robert W., 154 Koerth, B.H., 165, 385 Kosco, Barbara H., 265 Kothmann, M.M., 65, 733 Krueger, W.C., 302, 683, 685 Krysl, L.J., 104

Launchbaugh, G.K., 165 ILarrea tridentata, 726 Landsat computer-aided analysis techniques for range vegetation mapping, Laycock, William A., 217 Leckenby, Donavin A., 98, 312 Lee, J.B., 646 Legumes, 399, 700 Lehmann lovegrass, 649 Leifeste, William F., 149 Leininger, Wayne C., 327 Leptochloa dubia, 52 Leslie Jr., David M., 730 Lichens, 35 Linder, Raymond L., 500 Livestock behavior, 740 Long-term effects of big sagebrush control on vegetation and soil water, 760 Looman, J., 654 Lorenz, Jay, 275 Lorenz, R.J., 41, 91 Low-energy grubbing with special blade to control algerita, 601 Lucier, Gary S., 782 Lutrick, M.C., 773 Lymbery, Gordon A., 13

MacCracken, James G. 35 'Magnar' basin wildrye-germination in relation to temperature, 395 Mahgoub, Elfatih, 475 Mahoney, A.W., 529 Malechek, John, C., 152, 513, 518 Management considerations to enhance use of stock ponds by waterfowl broods, Mamane, 638 Mapping, 627 Marsh, M.P., 504

Marshall, M.B., 38, 46 Martin, F.G., 9 Martin, S. Clark, 309, 604 Mossbeds, 740

Mastication effects on cattle diet determined by microhistological analysis,

Mathematical models, 553, 596

Matschke, G.H., 504 Mayland, H.F., 286 McAdoo, J. Kent, 61 McArthur, E. Durant, 78, 485

McConnell, 184

McDonald, Lyman L., 463 McGinnies, W.J., 399 McGinty, Allan, 175 McGraw, Jerold F., 627 McInnis, M.L., 302

McKell, Cyrus M., 45, 366 McLean, Alastair, 694 McLendon, Terry, 457

McQuisten, Richard, 126 Meadors, C.H., 510

Mechanical animal-powered cow spacer,

Medicago sativa, 479, 499, 700

Medicago spp., 55 Mematodes, 744 Menke, John W., 70, 415 Menzel, R.G., 435 Merrill, Leo B., 175 Mertz, D.L., 542 Mesquite, 604

Method for mapping vegetation utilizing multivariate statistical techniques, 457

Meyer, R.E., 613 Microbial feeders, 744

Microclimate modification of tall moist grasslands of Natal by spring burning,

Microhistological technique, 132, 730 Miller, Richard, 195, 199 Mineral content, 280, 718

Mine spoil reclamation, 366 Mine spoils, 280, 713

Mitigation of chaining impacts to archaeological sites, 158

Mixed stand (grass-legume), 571 Modeling big sagebrush as a fuel, 596 Modified 100-point frame for vegetation inventory, 124

Molybdenosis in an area underlain by uranium-bearing lignites in the northern Great Plains, 280

Morden, C., 250 Morrical, D.G., 31

Mortality of cattle on two types of grazing areas in northwestern Alberta, 20 Motazedian, I., 469

Mountain goat, deer, cattle dietary overlap, 488

Mountainmahogony, 632 Mueller, Dennis M., 269

Muhlenbergia montana, 558 Mukhtar, Hashim, K., 477

Mulch, 711

Mule deer preference and monoterpenoids (essential oils), 485

Multipurpose inventory tool, 675 Multivariate statistical methods to determine changes in botanical composi-

tion, 208 Mutz, J.L., 582

Navajo National Monument, 250 Neal, Donald L., 623 Nebraska sedge (Carex nebraskensis Dewey) observations on shoot life history and management, 429 Nelson, James L., 354 Nest disturbance, 385 Nesting of vesper sparrow, 500 Neuenschwander, Leon F., 346 Nilgai antelope food habits, 316 Nitrogen fixation, 55 Nitrogen mineralization, 31, 286 Nonstructural carbohydrate and crude protein in pinegrass storage tissues, 440 Nutrient analysis, 44 Nutrient and sediment discharge from southern plains grasslands, 435 Nutrient availability, 104, 447 Nutrient content, 257, 298, 359, 399, 402 Nutrient content of annual grass-subclover, 593 Nutrient cycling, 75, 234, 558 Nutrients, 726 Nutritional level, 31, 175, 483 Nutritional value of crested wheatgrass

Nutritive value and intake of Kleberg

for wintering mule deer, 225

bluestem by beef cattle, 222

Nutritive value, 38, 41, 46, 513, 534

Nutritional values, 227

Nyren, Paul E., 354

Odocoileus hemionus, 485, 488, 492, 534 Olsen, John D., 550 Onsager, Jerome A., 202 Opuntia spp, 604 Oreamnos americanus, 488 Oryzopsis hymnenoides, 61, 82, 239 Oswald, Brian P., 507 Otis, D.L. 504 Owensby, Clenton, 75, 711

Pacheco, M.E., 222 Palatability, 65 Panicgrass (blue), 582 Panicum antidotale .582, 726

Panicum coloratum, 52 Panicum hemitomon, 298

Park, M.J., 529

Parkinsonia aculeata, 411

Pase, Charles, P., 382

Path coefficient analysis of seed yield in big bluestem, 652

Payne, Gene F., 327

Pedicellate spikelet fertility in big bluestem from eastern South Dakota, 131

Perry, L.J., 236 Pest control, 760 Photoperiods, 257

photosynthetic pathways, 431

Pieper, Rex D., 13, 22 Pinardi, Peter, 275

Pir:us caribaea, 773 Pitman, W.D., 52

Plant control, 9, 140, 154, 366, 370 Plant control, (brush), 149, 568, 601, 649,

760

Plant control (chemical), 510, 521 Plant control (mechanical), 13

Plant control (shrub), 604

Plant hardiness, 78 Plant management (brush), 786

Plant morphology, 131 Plant phenology, 70, 429

Plant-soil relationships on bentonite mine spoils and sagebrush-grassland in the

northern High Plains, 289 Plant succession, 114, 685

Plant toxicity, 550

Point frame for circular plots in southern forest-ranges, 121

Point frame method, 120, 124

Pooecetes gramineus,500

Population dynamics and age relationships of 8 tree species in Navajo National Monument, Arizona, 250

Predation, 20

Predation management, 16, 275, 527

Prairie dogs, 753

Predicting soluble nitrogen and fibrous fractions in crested wheatgrass with near-infrared-reflectance spectroscopy,

Prescribed burning in the northern great plains: yield and cover responses of 3 forage species in the mixed grass prairie,

Prescribed burning on B.C. rangelands: the state of the art, 3

President's address, 138

Presowing seed treatment and temperature effects on germination of Engel-mannia pinnatifida and Indigofera miniata var. leptosepala, 94

Pricklypear cactus, 604

Principles of intensive range improvements, 140

Production models, 733

Prosopis glandulosa, 145, 351, 370 Prosopis juliflora, 149, 309, 604, 613 Protein, 75 Protein content, 354 Protein (digestible), 571 Protein production, 402

Quantity and germinability of Oryzopsis hymenoides seed in Lahontan sands,

Quality of forage and cattle diets on the Wyoming high plains, 46 Quercus gambelii, 363

Quercus havardii, 510

Rabbitbrush, 616 Range condition trend, 25, 375 Range economics, 782 Range inventory, 457, 627

Range statistics, 126

Rangeland ponding dikes: design criteria, 128

Rasmussen, G.A., 337 Ratliff, Raymond D., 429

Rauzi, Frank, 359 Reciprocal averaging, 25

Reclamation, 423, 500, 713 Redente, Edward F., 390, 423

Reducing seed dormancy in Indian ricegrass [Oryzopsis hymenoides], 239

Regrowth of conifer, 265

Relationship between carbohydrate nitrogen contents, and regrowth of tall fescue tillers, 234

Relationship between Cutler Mormontea [Ephedra culteri] and coppice dunes in determining range trend in northeastern Arizona, 375

Relationship between selected factors and internal rate of return from sagebrush removal and seeding crested wheatgrass, 782

Relationship of relative total alkaloid concentration and toxicity of duncecap larkspur during growth, 550

Relationships of site characteristics to vegetation in canyon grasslands of west central Idaho and adjacent areas, 775

Response of forage species seeded for mule deer in western juniper types of southcentral Oregon, 98

Response of selected plant species seeded on mule deer winter range, 312

Response of soft chess (Bromus mollis) and slender oat (Avena barbata) to simulated drought cycles, 415

Response of wildlife food plants to spring discing of mesquite rangeland in northwest Texas, 351

Responses of selected wildlife species to the removal of mesquite from desert grassland, 309

Responses of semidesert grasses and shrubs to fall burning, 604

Revegetation, 140, 382, 419, 423 Rhoades, E.D., 435 Rhizobium species, 576 Rhodesgrass (Beel), 582 Ries, R.E., 124 Riparian ecosystem, 685, 683, 691 Riparian vegetation, 382 Rippel, Paul, 13 Rittenhouse, L.R., 553, 798 Rodent control, 504 Rodents, 61 Rogler, George A., 91 Ross, J.G., 131, 652 Rotational vs. continuous grazing affects animal performance on annual grasssubclover pasture, 593 Rounds, R.C., 16 Roundy, Bruce A., 61, 82 Rumble, Mark A., 691 Rushforth, Samuel, 250, 579 Ruyle, G.B., 472

# S

Sakai, Howard F., 495

Sampling methods, 119, 120, 124, 126, 132, 217, 302, 323, 405, 469, 477, 475, 623, 632, 675, 730, 798, 800 Samuel, M.J., 132 Satellite imagery, 627 Schizachyrium stoloniferum, 298 Savage, M.J., 172 Schlundt, Al F., 472 Schmidt, D.K., 87 Schuman, Gerald E., 387 Scifres, C.J., 65, 154, 295, 337, 568 Scifres, J.R., 65 Scowcroft, Paul G., 495 Seasonal changes in yield, digestibility, and crude protein of vegetative and floral tillers of two grasses, 402 Seasonal effects of nitrogen fertilization on three species of south Texas browse plants, 662 Seasonal grazing, 488 Seasonal growth, 571 Seasonal movements and home ranges of feral horse bands in Wyoming's Red Desert, 199 Seasonal variation in the ignition time of redberry juniper in west Texas, 169 Seasonal variation of monoterpenoids in big sagebrush (Artemisia tridentata), 492 Seed germination, 61, 82, 242, 390, 395, Seed germination characteristics of Kochia scoparia, 646 Seed germination characteristic of three woody plant species from south Texas, Seed germination characteristics of two woody legumes (retama and twisted acacia) from south Texas, 411 Seed production, 52, 82 Seed scarification, 94, 239, 246 Seedbed ecology of winterfat: fruits versus threshed seeds, 387 Seedbed preparation, 98, 649, 387, Seeded stands, 649

Seeding (seasons), 694 Seedling establishment, 98, 694, 703, 786 Seedling survival, 654 Senft, R.L., 553, 798 Schaid, Tim A., 500 Schliesing, T.G., 665 Schmutz, Ervin M., 632 Schreiber, Henry A., 726 Schultz, R.D., 571 Scowcroft, Paul G., 638 Serenoa repens, 9 Setaria macrostachria, 52 Shade intensity influences the nutrient quality and digestibility of southern deer browse leaves, 257 Shane, Ronald L., 782 Sharrow, Steven H., 447, 469, 593 Shaw, R.B., 668 Sheffield, William J., 316 Short-term changes in a cottonwoodash-willow association on a grazed and ungrazed portion of Little Ash Creek in central Arizona, 382 Sheep and deer competition, 190 Sheep grazing competition, 749 Shredding, 779 Sieg, Carolyn Hull, 289 Siever, T.E., 423 Simpson, C. David, 190 Skovlin, Jon M., 184 Slater, Ron C., 730 Slosser, J.E., 510 Smeins, Fred E., 175, 668 Smith, Gerald M., 733 Smith, Mark A., 55 Smith, Megeen C., 676 Smith, Michael D., 576 Smith, S.J., 435 Smolik, James D., 744 Sneva, F.A., 286, 707, 708 Sod-seeding alfalfa into cool-season grasses and grass-alfalfa mixtures using glyphosate or paraquat, 700 Soil analysis, 286, 289 Soil bulk density as influenced by grazing intensity and soil type on a shortgrass prairie site, 586 Soil characteristics related to production on subclover-grass range, 444 Soil classification, 775 Soil compaction, 586 Soil disturbance, 154, 155, 327, 579 Soil movement in mesquite dunelands and former grasslands of southern New Mexico from 1933 to 1980, 145 Soil plant relationships, 786 Soil porosity, 152 Soil temperature, 172 Soil toxicity reclamation, 673 Soil treatment (mechanical), 232 Soil water, 450, 708, 723, 760 Some factors affecting twig growth in blackbrush, 518 Sorghastrum secundum, 298 Sophora chrysopylla, 495,638 Sosebee, R.E., 521 Spermophilus richardsonii, 504

Seeding, 312, 782

Spring burning effects on redberry junipermixed grass habitats, 161 Spring livestock grazing affects crested wheatgrass regrowth and winter use by mule deer, 589 Starkey, Edward E., 730 State of dry matter and nutrients in soilplant systems of Arizona fescue and mountain muhly, 558 Statistical analyses, 25, 126 Step-point method, 623 Stephenson, Thor, 455 Steuter, Allen, A., 161, 343 Stevens, Richard, 78 Stillwell, M.A., 798 Stipa viridula, 390, 402 Stocking rate, 479 Stomach content analyses, 302 Stone, Laura R., 280 Stout, Darryl G., 440 Strang, R.M., 616 Strauss, David, 623 Stroup, Walter W., 208 Stubbendieck, J., 208, 571 Sturges, David L., 760 Successional trends in an ungrazed, arid grassland over a decade, 114 Suitability of commercially available grass species for revegetation of Montana ski area, 565 Summer food habits of domestic sheep in southeastern Montana, 307 Supplementation of yearling steers grazing fertilized and unfertilized northern plains rangeland, 41 Suzuki, Michio, 440 Symphporicarpos orephilus, 472 Szaro, Robert C., 382

# T

Taha, Faisal, K., 124 Tan, K.H., 234 Tall grasses, 711 Tebuthiuron, 2,4-D, 65 Temperature treatment, 94 Thomas, C.E., 121 Thomas, C. Lynn, 547 Tiezen, Larry L., 213 Tisdale, E.W., 775 Topographic and habitat use by sympatric barbary sheep and mule deer in Palo Duro Canyon, Texas, 190 Total urine collection from free-grazing heifers, 798 Toweill, Dale E., 98, 312 Towne, Gene, 75, 711 Townsend, C.E., 399 Townsend, Thomas W., 527 Trace elements, 718 Tractor-powered method for installing earth anchors during fence construction, 269 Trlica, M.J., 70 Trisacum dactyloides, 431 Tromble, John M., 128, 145, 370, 525, Tucker, Ronald D., 110

Tucker, W. Lee, 500 Tueller, Paul T., 627

U

Unbiased systematic sampling plans for the line intercept method, 463 Uranium, 280 Uresk, Daniel W., 35, 289, 307, 500 Urine collection, 798 Urness, P.J., 225, 513, 518, 589 Use of reciprocal averaging ordination for the study of range condition gradients, 25 Use of regression models to predict spatial patterns of cattle behavior, 553 Using precipitation to predict range herbage production in southwestern Idaho,

# V

Van Epps, Gordon A., 366
Van Haveren, Bruce P., 586
Van Rees, H., 740
Van Vuren, Dirk, 499
Vaughn, Charles E., 444
Vavra, Martin, 227, 302, 323, 683, 685, 730
Vegetation changes from 1935 to 1980 in mesquite dunelands and former grasslands of southern New Mexico, 370
Vegetation response to herbicides, 87

Vegetational evaluation of pinyon-juniper cabling in south-central New Mexico, 13

Vegetational responses following control of sand shinnery oak with tebuthiuron, 510

Vegetative response to burning, 337
Vehicle impacts on northern Great Plains
range vegetation, 327
Vermeulen, K., 172
Viewpoint: Soil boron guidelines for reclaimed western soils, 673

### w

Vogel, K.P., 700

Waggoner, Jr., J.W., 38, 46, 483
Waller, S.S., 87
Wallace, Walter H., 169
Warren, R.J., 104
Water catchments, 128
Water properties of caliche, 723
Waterfowl food habits, 691
Water stress (plants), 366, 415
Water uptake (plants), 760
Weaver, Richard A., 133
Webb, William M., 351, 385
Weight gain (cattle), 38
Weiler, Greg, 713
Welch, Bruce L., 485, 492

White, Larry M., 402 White, Richard S., 179, 611 Whitman, Warren C., 354 White-tailed deer food habits and nutritional status as affected by grazing and deer-harvest management, 104 Wiedemann, H.T., 601 Wildlife habitat management, 104, 351 Wildlife harvest, 104 Wight, J.R., 479 Wikeem, Brian M., 3, 694 Williams, J.R., 435 -Williams, William A., 444 Wilson, A.M., 390 Woodmansee, R.G., 553 Wright, Henry A., 161, 169 Wynia, R., 131

# V

Yaupon and associated vegetation response to seasonal tebuthiuron applications, 568
Yield of three range grasses grown alone and in mixtures with legumes, 399
Young, James A., 61, 82, 395, 419, 786

# 7

Zemetra, Robert S., 239 Zimmerman, G. Thomas, 346